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Pest Management News

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OFFICIAL NEWSLETTER OF THE INTEGRATED PEST MANAGEMENT RESEARCH, DEVELOPMENT AND APPLICATIONS PROGRAM
2500 SHREVEPORT HIGHWAY · PINEVILLE, LOUISIANA 71360

Integrated Pest Management Symposium Set

We hope our readers will reserve the dates of June 19 - 21 for the Integrated Pest Management Symposium to be held in Athens, Georgia. The purpose of the Symposium is to present available technology on insect, vegetation, disease, and animal pest management for incorporation into the forest management planning process. The keynote speaker will be R. Max Peterson, Chief of the U.S. Forest Service. The program will include presentations by Federal, State, and university pest management specialists and exhibits describing practical integrated pest management approaches. There will be time for discussions. The Symposium proceedings will be published. An outline of the program is tabulated below. For further information, contact Mr. Andy Little, Conference Coordinator, Georgia Center for Continuing Education, University of Georgia, Athens, GA 30602.

Weight Scaling Factors Developed for Beetle-Killed Pine

Beetle-killed pines can be used for many products if harvested soon after attack (see Agriculture Handbook No. 572). Conversion factors of weight to volumes for live pine timber should not be applied to beetle-killed trees because of their lower moisture content. Within several months of their death, beetle-killed trees, while losing little wood substance, lose over half their moisture content. Since water content has been found to account for half the total weight of a live loblolly pine, this results in value lost if marketed on a weight basis.

These findings were reported by W. H. McNab in "Total Tree and Product Weight of Beetle-Killed Loblolly Pines in Northeast Georgia," Georgia Forest Research Paper 42 (March 1983), issued by the Georgia Forestry Commission. Results came from a study to develop prediction equations and tables for estimating the weight of trees killed by southern pine beetles. Copies may be obtained from the Research Division of the Commission, P.O. Box 819, Macon, GA 31298-4599. McNab is a research forester with the Forest Service's Southeastern Forest Experiment Station, located at Athens, Georgia.

Session	Topics/Presenters				
	Insects	Diseases	Vegetation	Animals	Integrators
IPM Concepts in Forestry	Dr. Jack Coster	Drs. Alan Jones and Harry R. Powers, Jr.	Drs. Jack Walstad and Dean Gjerstad	Dr. Rex Marsh	N/A
Stand Mgt. 0-5 yrs.	Drs. Roy Hedden and T. Evan Nebeker	Robert Anderson and Drs. Glenn A. Snow and R. A. Schmidt	Drs. Larry Nelson and Stephen Cade	Dr. Ed Hill	Drs. Thomas A. Terry, Stephen Cade, and William Leuschner
Stand Mgt. 6+ yrs.	Drs. T. Evan Nebeker and Roy Hedden	Drs. E. George Kuhlman, and George Blakeslee, and Ron Froelich	Drs. Jeff Paschke and William Pope	Dr. Ed Hill	Drs. William Leuschner and Thomas A. Terry
Seed Orchards	Drs. Harry O. Yates, III and Gary DeBarr	Dr. Thomas Miller	Dr. J. B. Jett	Dr. Jeff Jackson	Barry Malac and John Godbee
Nurseries	Drs. Wayne Dixon and John L. Foltz	Drs. Walt Kelley and C. E. Cordell	Dr. David South	Dr. Jeff Jackson	Dr. John Mexal

Chattahoochee-Oconee NF Implements Hazard Ratings

Foresters on the Chattahoochee-Oconee National Forest in Georgia will now hazard rate stands for southern pine beetle as part of the routine compartment prescription process.

December coordination meetings in Gainesville included representatives from the Forest Supervisor's Office (Earl Darby, Timber Staff Officer, and Tony Durkas, Silviculturist), Region 8, Forest Pest Management (Wes Nettleton and Bill Hoffard, Entomologists), and 15 compartment prescriptionists from throughout the Chattahoochee-Oconee.

Two systems will be used: MOUNTAIN RISK on mountainous districts of the Chattahoochee (about 45,000 susceptible acres) and NATIONAL FOREST (NF) RISK on the Oconee District and Piedmont areas of the Chattahoochee (about 95,000 susceptible acres). MOUNTAIN RISK, developed by Dr. Roy Hedden of Clemson University, is already in use. NF RISK, developed by Dr. Pete Lorio of the Southern Forest Experiment Station for use in the Gulf Coast Plain, is being modified for use in the Piedmont, but will first be field tested to insure its practicality for Georgia use. Each system is simple to apply, with MOUNTAIN RISK requiring minimal field effort and NF RISK using existing computerized forest stand data. Both were developed with support of the IPM RD&A Program.

National Forests in Georgia have incurred heavy losses from SPB, particularly the Oconee District. Foresters there are pleased to have hazard rating as a part of their integrated pest management arsenal. (Contributed by Bill Hoffard)

Aerial Photographs Available

In June 1982, a Forest Pest Management Aerial Survey Team photographed 10 South Carolina Coastal Plain counties as part of a cooperative project between the S.C. Forestry Commission and the U.S. Forest Service to develop a procedure for measuring SPB-caused timber mortality over large geographical areas. The IPM Program funded the project.

The color infrared photography, available in a 9- by 9-inch format, will be a valuable tool to the Commission in its efforts to reduce SPB damage to South Carolina's forest resources. Now a committee has been set up to make these photographs accessible to others. The S.C. Forestry Commission announced the availa-

bility of the prints on December 13, 1983, in a letter to cooperators. An enclosure explaining details of the offer is reprinted below.

TO PROSPECTIVE COOPERATOR:

Recent color infrared aerial photography can be a tremendous tool in managing forest land. By making duplicate prints of a recent Coastal Plain coverage available at cost to private landowning groups, the South Carolina Forestry Commission has provided a means for this tool to be acquired at a considerable savings. Each photograph will cost between \$5 and \$6 each, depending upon quantity. The photography was exposed at a scale of 1:24,000 (1" = 2000'), with exposure during the spring season (June 1982) enabling the interpretation of hardwoods with foliage. A similar Piedmont coverage was distributed last year at a cost of \$5.78 per frame.

Other available aerial photographic coverage of the area will average more than five to eight years old and is usually black and white. Recent changes for roads, timber sales, and site preparation/planning reduce the utility of older coverages. The color infrared photography allows more differences to be interpreted when compared to black and white photography.

A committee has been established to meet the following objectives for distribution of the photography:

- Contact private groups, including forest industry and consultants, who may be interested in acquiring duplicate prints of the coverage,
- Determine the desired coverage for each group and collate requests, and
- Arrange with a processing lab (Precision Photo Labs of Dayton, Ohio) for pricing, printing, and payment of cooperative requests.

SCFC Photography Cooperative Committee:

Steve Newman (Westvaco)

Mike Remion (SCFC)

Dwight Stewart (Consulting Forester)

For further information and detailed acquisition procedures, contact Mike Remion, South Carolina Forestry Commission, P.O. Box 21707, Columbia, SC 29221.

IPS Bark Beetle Publication Released

To manage or control a forest pest, resource managers must be able to identify it, be familiar with its habits, and be able to recognize the symptoms of its attack. A recently revised leaflet on Ips bark beetles published by the USDA Forest Service can be very useful in this respect. The leaflet covers descriptions, biology, and management of these important insects, and includes color photographs to aid in identification of the beetle and infestation symptoms.

Copies of "Ips Bark Beetles in the South," Forest Insect and Disease Leaflet 129, by Mike Connor, Southern Region, FPM, and Bob Wilkinson, Professor of Forest Entomology, University of Florida, can be obtained from USDA Forest Service, Information Center, 1729 Peachtree Road, NW, Suite 816, Atlanta, GA 30367.

IPM RESEARCH HIGHLIGHTS

This section provides a timely introduction and description of new technology as it becomes available. We encourage you to use the summary as is or to abstract and distribute the material to employees, associates, clients, or cooperators in your own newsletters, fact sheets, technology tips, etc. If you use this information in any way, we would appreciate knowing how it was used and what the response was.

If you need more details, contact the Program or the developer of the technology.

SAMTAM: Sawmill Analysis Model for Green and Beetle-Killed Southern Pine Timber

How much profit or loss will a sawmill experience in processing a log of given diameter and grade? How is this profit or loss affected by time since death from beetle infestation?

It has been proven that there is value remaining in beetle-killed timber, but the mill manager needs information that is specific to his mill. SAMTAM and SAMTAM II were developed to help provide this information. SAMTAM is a sawmill analysis model for green logs only, SAMTAM II considers both green and beetle-killed logs. Both models provide two quality control checks (sawing variation and log overlength), three recovery efficiencies (LRF, overrun, and percentages), and two profit or loss analyses (actual log data and smoothed predictions).

The models are written to estimate the volume of wood residues generated from each log. These estimates are based on the actual lumber sawn from the log rather than on the log size. The green lumber volume is calculated with the average rough green dimensions. The sawdust volume is predicted using board feet of lumber and piece count as independent variables. The chip volume is the difference between the log volume and the lumber and sawdust volumes. The shaving volume is calculated for each board by reducing its rough, green volume for shrinkage and subtracting its dry, dressed volume.

A density distribution function is used to convert the volumes of the green residues to weights. The function is divided into nine distributions based on

butt or upper log and diameter class. The models use the log data to determine which distribution to use and a random number generator to select the density value from that distribution. The density data are based on actual debarked log data collected at sawmills in east Texas. Shaving density was assumed to be 37 pounds per cubic foot.

SAMTAM II uses reduction factors for changing bark weight and green residue weights. The reduction factors are based on data collected from trees in the West Gulf Region that have been dead for periods of 6 months.

The models assign a dollar value to the lumber, based on its size and grade, and to the residues based on their weights. Current market prices are input to the models, dollar values are summed by log, and the profit or loss incurred in processing a log is determined by subtracting log cost and processing cost from the total log value. The models also provide smoothed estimates of profit or loss for each log size, grade, and kill class.

Currently, SAMTAM is available in Fortran for larger computers and Applesoft for the Apple II microcomputer. SAMTAM II is available in Fortran and may be available in the future in Applesoft.

For additional information, contact Dr. David W. Patterson, Division of Forestry, West Virginia University, Morgantown, WV 36506, or Robert Westbrook, Primary Processing Specialist, Southern Region-S&PF, Pineville, LA 71360.

Consider Pests Before Planting

Planting southern pines, rather than depending on natural regeneration or direct seeding, allows landowners to choose the species best adapted to the local climate and soils and most resistant to local insect and disease pests. For example, slash pine, which is severely damaged by ice storms and can become heavily infected with fusiform rust, should be planted only within its natural range on wet sites in the southern Lower Coastal Plain.

"How to Establish a Pine Plantation," an article by Dr. Thomas Terry, Research Manager at Weyerhaeuser, in a recent issue of *Forest Farmer*, discusses a number of factors including pests that should be considered before planting. Dr. Terry points out that shortleaf pine is very resistant to fusiform rust but in the seedling stage can be severely infected with tip moth. By the same token, longleaf pine, while not susceptible to tip moth or fusiform rust, can be seriously damaged in the seedling stage by brown-spot needle blight. Because of its resistance to fusiform rust, it may be the preferred species on drier sites within its range where the rust problem is chronic. Dr. Terry points out that there is within species variation. Therefore, it is quite important to use a seed source from stock showing resistance to pests in the area to be regenerated.

For further information or a copy of his article, write to Dr. Thomas Terry, Research Field Station, Weyerhaeuser Co., P.O. Box 2288, Columbus, MS 39701.

Western Project Meeting Forges Interregional Links

Portland, Oregon, was the site of the annual meeting of participants, collaborators, and interested parties concerned with Western Regional Project W-110, held January 4-5, 1984. The project, *Interactions Between Bark Beetles and Pathogens and Their Influence on Forest Productivity*, considers: 1) Site/stand factors associated with beetle and disease-caused growth loss and mortality, 2) the role of bark-inhabiting insects in transmitting and inoculating pathogenic and decay fungi, 3) etiology of root pathogens that predispose trees to beetle infestation, 4) mechanisms involved in host selection/colonization by bark beetles and associated pathogens, and 5) development/testing of survey methods and treatment tactics. Forest Service (FS) and university representatives from the South were invited to participate because of similar work going on in the region and the need to consider expanding W-110 into an interregional effort. Bob Thatcher, IPM Program,

and Pete Lorio, Forest Insect Research, attended from the Southern Forest Experiment Station, as did Program Investigator Roger Webb, University of Florida.

The Western Regional Project has existed since mid-1970 and involves faculty and graduate students from western universities and FS research and pest management collaborators from Montana, Idaho, Washington, Oregon, and California. Most of the work has been university based. Participants at the January meeting presented progress reports and plans for continuing work on major disease problems, pest-host interactions, surveys, and new or improved approaches to managing priority pest problems in the western United States.

In addition to the SO representatives, attendees included students and/or faculty from the University of California at Berkeley and Riverside, University of Florida, Oregon State University, University of Washington, Washington State University, and research and pest management specialists from the FS Pacific Northwest and Pacific Southwest Experiment Stations and the Northeastern, Southern, Pacific NW and Pacific SW Regional Offices.

Growth and Yield Research in South Reviewed

Southern research in growth and yield (G&Y) was reviewed by U.S. Forest Service and other Federal organizations, university, forest industry, State and consultant personnel in Atlanta on January 17-18, 1984. Approximately 100 individuals (including Bob Thatcher and Gerry Hertel from the IPM Program) were in attendance. The meeting was sponsored by the Southern Regional Planning Group (RPG) 2.0, the Southern Industrial Forestry Research Council (SIFRC), and the National Association of Professional Forestry Schools and Colleges (NAPFSC).

The purpose of the review was to provide a forum for discussing the state-of-the-art and to identify future needs for research and applications in growth and yield. A review team was formed composed of Douglas Crutchfield (Westvaco), Jim White (St. Regis Paper Corporation), George Allbritton (Florida Division of Forestry), Sid McKnight (Consultant and Editor, *Southern Journal of Applied Forestry*), Harold Burkhart (Virginia Polytechnic Institute & State University), Al Sullivan (Mississippi State University), David Belcher (U.S. Forest Service, Southern Region), and Nelson Loftus (U.S. Forest Service, Timber Management Research Staff, Washington Office). They were asked to prepare a report summarizing the current status of G&Y research in the

South, feedback from conference participants, and priorities and recommendations for continuing or new research and applications work.

Eldon Ross, Director, Southeastern Forest Experiment Station and Cochairman for RPG 2.0, and Arnett Mace, Director, School of Forestry and Conservation, University of Florida, and Cochairman for RPG 2.0, set the stage for the review and explained the role of the review team. Audience participation was encouraged.

Sixteen moderators and speakers presented information on a number of topics and fielded questions in the areas of:

1. Naturally regenerated stands of major southern pines.
2. Artificially regenerated stands of major southern pines.
3. Pine-hardwood and mixed southern pine stands.
4. Upland and bottomland hardwood stands.

Six speakers discussed compatible growth and yield data from forest survey data and technology transfer of G&Y information from southern pine and hardwood stands. Gerry Hertel discussed the technology transfer approaches and successes of the Integrated Pest Management Program.

Barry Malac (Union Camp Corporation) summarized his impressions of the meeting and future needs from a user's perspective.

Before adjourning, the review team prepared a draft of their report, which will be published in the near future.

Other Publications

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Ham, D. L. Cut and leave: a method for controlling southern pine beetle infestations. *For. Pest Leaflet*. No. 7. Clemson, SC: Clemson University Cooperative Extension Service; 1983. 6 p.

Ham, D. L. Identifying the southern pine beetle. *For. Pest Leaflet*. No. 5. Clemson, SC: Clemson University Cooperative Extension Service; 1983. 6 p.

Ham, D. L. Salvage removal: a method for controlling southern pine beetle infestations. *For. Pest Leaflet*. No. 6. Clemson, SC: Clemson University Cooperative Extension Service; 1983. 6 p.

Nebeker, T. E.; Hodges, I. D. Influence of forestry practices on host-susceptibility to bark beetles. *In: Proc., Symposium on Insect and Host Tree Interactions*, 1983 March 29-31, University of Freiburg/Br., West Germany. *Zeit. angew. Entomol.* 96(2): p. 194 - 207. Hamburg, West Germany: Verlag Paul Parey; 1983.

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